

Amrit Public School, Malan



Class- 12(PCB)

Holiday Homework

Roll No.:.....

Name:.....

Class Teacher's Sign

Co-Ordinator Sign

Physics

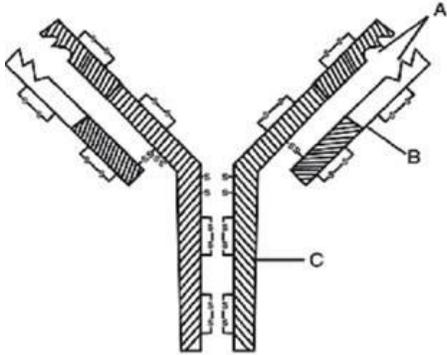
1. Find the radius of curvature of the convex surface of a plane convex lens, whose focal length is 0.3m and the refractive index of the material of the lens is 1.5?
2. Show that the limiting value of the angle of prism is twice its critical angle? Hence define critical angle?
3. A convex lens made up of refractive index n_1 is kept in a medium of refractive index n_2 . Parallel rays of light are incident on the lens. Complete the path of rays of light emerging from the convex lens if
 - (i) $n_1 < n_2$
 - (ii) $n_1 = n_2$
 - (iii) $n_1 > n_2$
4. Drive the expression for the angle of deviation for a ray of light passing through an equilateral prism of refracting angle A ?
5. Derive the relation $\frac{1}{f} = \frac{1}{f_1} + \frac{1}{f_2}$ Where f_1 are f_2 focal lengths of two thin lenses and F is the focal length of the combination in contact.
6. A converging lens of focal length 6.25cm is used as a magnifying glass if near point of the observer is 25cm from the eye and the lens is held close to the eye. Calculate (1) Distance of object from the lens. (2) Angular magnification and (3) Angular magnification when final image is formed at infinity.
7. A convex lens has a focal length 0.2m and made of glass is immersed in water, find the change in focal length of the lens?
8. An object of size 3.0 cm is placed 14 cm in front of a concave lens of focal length 21 cm. Describe the image produced by the lens. What happens if the object is moved further away from the lens?
9. Define total internal reflection of light? Hence write two advantages of total reflecting prisms over a plane mirror?
10. An equi-convex lens of radius of curvature R is cut into two equal parts by a vertical plane, so it becomes a plano-convex lens. If f is the focal length of equi-convex lens, then what will be focal length of the plano-convex lens?

Chemistry

1. Mention the conditions required to maximize the yield of ammonia.
2. What happens when H_3PO_3 is heated?
3. How is O_3 estimated quantitatively?
4. How is the presence of SO_2 detected?
5. Mention three areas in which H_2SO_4 plays an important role.
6. Write the conditions to maximize the yield of H_2SO_4 by Contact process.
7. Illustrate how copper metal can give different products on reaction with HNO_3 .
8. Give the resonating structures of NO_2 and N_2O_5 .
9. Nitrogen exists as diatomic molecule and phosphorus as P_4 . Why?
10. Why is dioxygen a gas but sulphur a solid?

Biology

1. What are Cannabinoids? From which plant Cannabinoids are obtained? Which part of the body is affected by consuming these substances?
2. In the figure, structure of an antibody molecule is shown. Observe it and Give the answer of the following questions.
(i) Label the parts A, B and C. (ii) Which cells produce these chemicals?
(iii) State the function of these molecules.



3. Mention any three causes of drug abuse. Suggest some measures for the prevention and control of drug abuse.
4. What is innate immunity? List the four types of barriers which protect the body from the entry of the foreign agents.
5. How does humoral immune system works when our body is infected?
6. What are carcinogens? What are the different types of carcinogens? Also mention the different methods of treatment of cancer?
7. Describe the ill – effects of drug abuse in males & females. Also mention the preventive measures that is to be taken to reduce such effects.
8. What is vaccination? What type of immunity is provided by vaccination?
9. (i) Differentiate between communicable & non – communicable diseases?

हिंदी

- शोपिंग मॉल का मायाजाल विषय पर एक फीचर लिखें ।
- यात्रा में रेलकर्मचारी के अभद्र व्यवहार की शिकायत पर रेल अभिकारी को एक पत्र लिखें ।

Physical Education

- Make a knock out fixture for 21 team.
- How many types of posture? Explain them.
- Types of training? Explain Fart let training.

Informatics Practices

1. Discuss and compare various types of networks?
2. Explain mostly used topologies.
3. What are hubs? What are its types?
4. What is the role of a switch in a network?
5. Discuss repeater.
6. What are common threats to network security?
7. What are denial of services attacks?
8. How can you prevent/ counter threats of network security?
9. When do you think, ring topology becomes the best choice for a network?